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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,874	10/19/2000	James A. Proctor JR.	2479.2009-000	5418

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EXAMINER	
SCHEIBEL, ROBERT C	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/691,874	PROCTOR, JAMES A.	
	Examiner	Art Unit	
	Robert C. Scheibel	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

- Examiner acknowledges receipt of Applicant's Amendment filed 8/20/2007.
- Claims 22-24 have been cancelled in the present Amendment.
- Claims 1, 3, 5, and 13 are currently amended in the present Amendment.
- Claims 1-21 are currently pending.

Response to Arguments

1. Applicant's arguments, see the section titled "Claim Rejections" on pages 9-11, filed 8/20/2007, with respect to the rejection of claims 1 under 35 U.S.C. 101 have been fully considered and are persuasive. The rejection of claim 1 under 35 U.S.C. 101 has been withdrawn.

2. Applicant's arguments, see the section titled "Claim Rejections" on pages 9-11, filed 8/20/2007, with respect to the rejection of claims 1-9 and 13-18 under 35 U.S.C. 102(e) and claims 10-12 and 19-21 under 35 U.S.C. 103(a) have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **1-9 and 13-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,226,274 to Reese in view of U.S. Patent Publication 2001/0046219 to Kitade et al.

Regarding claim **1**, Reese discloses identifying a plurality of forward channels dedicated for wireless communication from the wireless communications unit to one or more remote wireless communications units (see figure 3 showing 8 Base Tx channels (311));

identifying a second plurality of reverse channels dedicated for communication from the one or more remote wireless communications units to the wireless communications unit (see figure 3 showing 8 Base Rx channels (312));

scheduling the plurality of forward channels according to a first predetermined cycle, wherein each forward channel is assigned a corresponding forward time slot in the first predetermined cycle (see figure 3; the forward time slots 306 are scheduled according to a predetermined cycle);

scheduling the plurality of reverse channels according to a second predetermined cycle, wherein each reverse channel is assigned a corresponding reverse time slot in the second predetermined cycle (see figure 3; the reverse time slots 307 are scheduled according to a predetermined cycle); and

allocating the plurality of forward and reverse channels for communication between the wireless communications unit and one or more remote wireless communications units (as is well known, the time slots are allocated to a mobile station; see lines 20-25 of column 2, for example).

Reese does not disclose expressly the limitation that each forward time slot has a partial time overlap with a corresponding reverse time slot for wireless communication with a particular

remote wireless communications unit such that the second predetermined cycle is out of phase with the first predetermined cycle by less than one time slot interval such that return messages for wireless communication with the particular remote wireless communications unit are processed and transmitted in less than one time slot.

Similarly, Reese discloses the analogous limitations of claims 3, 5, and 13 as indicated above. Further, the wireless communication unit and base station processor of claims 3 and 13 are disclosed by the base station described throughout (see Figure 4, for example) and the remote wireless communication units and the at least one subscriber access units are disclosed by the handsets described throughout (see Figure 8, for example). The local and remote schedulers are the over-the-air controllers 410 and 810, respectively.

However, Kitade discloses the limitation that each forward time slot has a partial time overlap with a corresponding reverse time slot (described throughout – see TShift of Figures 1, 2, and 4-7, for example) for wireless communication with a particular remote wireless communications unit such that the second predetermined cycle is out of phase with the first predetermined cycle by less than one time slot interval clearly this offset is less than a slot (1/2 slot as indicated in paragraph 10 on page 1 as one example)) such that return messages for wireless communication with the particular remote wireless communications unit are processed and transmitted in less than one time slot (see Figure 4 and paragraphs 48-49 on page 3 which shows the TPC (return message) processed and transmitted in less than one time slot).

Reese and Kitade are analogous art because they are from the same field of endeavor of wireless communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Reese to allow a partial time slot overlap between the forward

and reverse channels as taught by Kitade. The motivation for doing so would have been minimize control delays as suggested by Kitade in paragraph 24 on page 2. Therefore, it would have been obvious to combine Kitade with Reese for the benefit of minimizing control delays to obtain the invention as specified in claims 1, 3, 5, and 13.

Regarding claims **2 and 4**, Reese discloses the limitation that the wireless communication unit is a base station processor and the remote wireless communication unit is a subscriber access unit in figure 1 (showing a base station and mobile units).

Regarding claim **6**, Reese discloses the limitation that the first channel is scheduled by a first scheduler (the controller 910 of figure 9) in the base station processor, and the second channel is scheduled by a second scheduler (the controller 810 of figure 8) in the subscriber access unit.

Regarding claim **7**, Reese discloses the limitation that the first cycle corresponds to a forward interval, and the second cycle corresponds to a reverse interval in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim **8**, Reese discloses the limitation that the forward interval and the reverse interval are equal disclosed in figure 3 (both are 8 slots).

Regarding claim **9**, Reese discloses the limitation that the forward interval and the reverse interval correspond to an integral multiple in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

Regarding claim **14**, Reese discloses the limitation that the scheduler further comprises a forward scheduler in the base station processor (controller 910 in figure 9) and a reverse scheduler in the subscriber access unit (controller 810 in figure 8).

Regarding claim **15**, Reese discloses the limitation that the forward cycle occurs at a forward interval and the reverse cycle occurs at a reverse interval in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim **16**, Reese discloses the limitation that each of the forward channels and each of the reverse channels is allocated for a predetermined duration based on the forward interval and the reverse interval, respectively in figure 3 (showing using the scheduled, cyclic slots on the forward and reverse frequencies).

Regarding claim **17**, Reese discloses the limitation that the forward interval of the forward cycle and the reverse interval of the reverse cycle are equal in duration in figure 3 (both are 8 slots).

Regarding claim **18**, Reese discloses the limitation that the frequency of the forward interval and the frequency of the reverse interval correspond to an integral multiple in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

5. Claims **10-12, and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,226,274 to Reese in view of U.S. Patent Publication 2001/0046219 to Kitade et al and in further view of Applicant's Admitted Prior Art (AAPA).

Regarding claims **10 and 19**, Reese and Kitade disclose all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, the combination of Reese and Kitade does not disclose expressly the limitation that the forward interval and the reverse interval are between 26 and 27 ms. However, the limitation of the frame (or epoch) depends upon the wireless standard employed; it would be obvious to apply the teachings of the

combination of Reese and Kitade to another wireless standard. In lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of the combination of Reese and Kitade to another wireless standard. The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine the combination of Reese and Kitade with AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 10 and 19.

Regarding claims **11 and 20**, Reese and Kitade disclose all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, the combination of Reese and Kitade does not disclose expressly the limitation that the forward interval and the reverse interval are between 13 and 14 ms out of phase. However, the limitation of the frame (or epoch) depends upon the wireless standard employed; it would be obvious to apply the teachings of the combination of Reese and Kitade to another wireless standard. In lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of the combination of Reese and Kitade to another wireless standard. In this case the offset would be about half of this frame/epoch (or between 13 and 14 ms). The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine the combination of Reese and Kitade with

AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 11 and 20.

Regarding claims **12 and 21**, Reese and Kitade disclose all the limitations of parent claim 7 as indicated in the rejection under 35 U.S.C. 102(e) above. However, the combination of Reese and Kitade does not disclose expressly the limitation that the forward interval and the reverse interval are an epoch. However, this is a matter of semantics; the frame of Reese is equivalent to the epoch of other wireless standards. For example, in lines 14-16 of page 6 of the specification, AAPA discloses that 26.6667 ms frames/epochs are used for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to apply the offset teachings of the combination of Reese and Kitade to another wireless standard. The motivation would be to allow the mobile station in the other wireless standard sufficient turn-around switching and processing time as suggested by Reese in lines 32-31 of column 2. Therefore, it would have been obvious to combine the combination of Reese and Kitade with AAPA for the benefit of sufficient turn-around time to obtain the invention as specified in claims 12 and 21.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Mon and Thurs (6:30-5:00) and Fri (6:30-12:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert C. Scheibel
Patent Examiner
Art Unit 2619

11/5/07

WING CHAN
SUPERVISORY PATENT EXAMINER